

REMARKS

Favorable reconsideration in view of the previous amendments and following remarks is respectfully requested.

Claims 1-13 are pending. By this Amendment the specification, abstract and claims 1, 2 and 6-10 are amended and new claims 12 and 13 are added.

The Office Action objects to the specification. The abstract and specification are amended to address the Examiner's concerns.

The Office Action objects to claim 1. Claim 1 is amended to address the informalities pointed out by the Examiner.

The Office Action rejects claims 2 and 6-11 under 35 U.S.C. §112 second paragraph. The term "preferably" has been deleted from claims 2 and 6-10.

The Office Action rejects claims 1-5 and 7-11 under 35 U.S.C. §102(b) over U.S. Patent No. 4,540,187 to *Morawski et al.*; rejects claims 1-3, 5 and 7-11 under 35 U.S.C. §102(b) over U.S. Patent No. 2,922,657 to *Garrison et al.*; rejects claims 1-3, 5 and 7-9 under 35 U.S.C. §102(b) over U.S. Patent No. 1,692,379 to *Kempton et al.*; rejects claim 6 under 35 U.S.C. §103(a) over *Morawski et al.* in view of U.S. Patent No. 3,019,039 to *Clavell*; rejects claims 6 under 35 U.S.C. §103(a) over *Garrison* in view of *Clavell*; and rejects claim 6 under 35 U.S.C. §103(a) over *Kempton et al.* in view of *Clavell*. These rejections are respectfully traversed.

Neither the *Morawski et al.*, *Garrison* nor *Kempton* patents disclose or suggest pulling a body by means of a tensile force which acts in extension of a rotation axis of the body during clamping as in Applicants' independent claim 1. Such features encompass Applicants' embodiment illustrated in Fig. 6 wherein tie rod 64 includes a coupling device 63 which may be connected to the coupling unit 18

of a body to be clamped. The tie rod 64 is rotatable about its own axis 19' and is movable back and forth in the axial direction. The tie rod 64 may be actuated and the tensile force F1 may be set via a controllable hydraulic or pneumatic unit.

The Examiner asserts that the *Morawski et al.* patent discloses a method of clamping a rotationally symmetrical body W which is pulled by means of a tensile force created by elements 22, 36 and 38. However, shaft 22 is formed with a threaded socket 30 for connection with an axially shiftable draw bar in the machine tool spindle. The draw bar of the machine tool is actuated to retract shaft 22. Collet sleeve 38 is therefore shifted axially rearwardly which causes the enlarged ends 46 to engage the inclined annular surface 114 on expander bushing 50. The ends 46 of collet fingers 44 are displaced in directions radially outwardly and axially rearwardly. The fingers engage the inner peripheral surface 116 of the work piece and merely clamp the work piece firmly against ring 102. In this position the work piece is gripped by the chuck. However, this gripping is merely compression and not tension. Thus, *Morawski et al.* does not disclose pulling a body by means of a tensile force which acts in extension of the rotation axis of the body during clamping.

The *Garrison* patent discloses at the paragraph beginning at line 72 of column 4 that the chucking of the work piece disposes it in a relatively free state, completely relaxed, and free of any holding distortion. The movement of the work piece inwardly to the diaphragm 16 causes it to engage the shedder pin elements 54 of the shedder 43 to bias the shedder inwardly towards the rear of the housing 1 against the bias of the springs 50. On movement of the draw bar rearwardly at the body 1, disc 38 engages cam surfaces 58 of fingers 35 applying an outward bias of the fingers about pivots 56 and a rearward bias of the sleeve 33 through the fingers.

This effects an alignment of hook extremities 36 with guide slots 37, the disc camming the hooks outwardly of the guide through slots 37 to engage the hooks 36 over the outer face of the work piece at its inner periphery. Rod 5 is retracted in the rear end of guide 20 and the engaging pressure of disc 38 imposes a bias of sleeve 33 to shoulder 34 that compresses and energizes springs 39 therebetween. Thus, *Garrison* does not disclose pulling a body by means of a tensile force which acts in extension of a rotation axis of the body during clamping.

The *Kempton* patent discloses a centering bushing 15 having a peripheral flange 16 on its inner end that is mounted on a face plate 13 and is adapted to engage and center the part being chucked. The clamping members 14 are adapted to be moved forward by a plurality of springs 14 and rearwardly by a suitable draw bar 17. The work piece is chucked and operated on by a suitable element 18 and is gaged by a member 19 mounted on the forward end of a rod 20 extending through the spindle 11. In either of the two methods disclosed in the *Kempton* patent to locate and center a work blank A, compression via jaws 34 and pins 38 are used to engage blank A. Thus, *Kempton* does not disclose pulling the body by means of a tensile force which acts in extension of a rotation axis of the body, and clamping the body while the tensile force pulls the body.

Thus, claim 1 is distinguishable over the *Morawski et al.*, *Garrison* and *Kempton* patents.

Applicants' independent claim 7 recites, in combination with other claim features, a device for clamping a rotationally symmetrical body a tie rod which is mounted in the device in such a way that it can act on the body to be clamped during clamping, axially and concentrically to the rotation axis of the latter and is axially

guided with radial clearance for the axial pulling movement, a tensile force of the tie rod being adjustable. As discussed above neither the *Morawski, Garrison* nor *Kempton* patents disclose a tensile force acting on a work piece during clamping.

The dependent claims are allowable for at least the reasons discussed above as well as for the individual features they recite.

Clavell does not overcome the deficiencies of the *Morawski et al., Garrison* and *Kempton* patents described above.

Early and favorable action with respect to this application is respectfully requested.

Should the Examiner have any questions regarding this Amendment or the application in general, he is invited to contact the undersigned at the number provided below.

Respectfully submitted,

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